

## CLAIMS:

1. A method for improving vaccination comprising reactivation of the thymus of a patient.
2. The method of claim 1 wherein the patient's thymus has been at least in part  
5 deactivated.
3. The method of claim 2 wherein the patient is post-pubertal.
4. The method of claim 1 further comprising the step of administering hematopoietic stem cells to the patient.
5. The method of claim 4 wherein the hematopoietic stem cells are CD34+.
- 10 6. The method of claim 4 wherein the hematopoietic stem cells are autologous or syngeneic.
7. The method of claim 4 wherein the hematopoietic stem cells are allogeneic or xenogeneic.
8. The method of claim 4 wherein the hematopoietic stem cells are administered  
15 about the time when the thymus begins to regenerate or shortly thereafter.
9. The method of claim 4 wherein the hematopoietic stem cells are provided at the time disruption of sex steroid mediated signaling to the thymus is begun.
10. The method of claim 1 wherein the method of disrupting the sex steroid mediated signaling to the thymus is through surgical castration to remove the patient's gonads.
- 20 11. The method of claim 1 wherein the method of disrupting the sex steroid mediated signaling to the thymus is through administration of one or more pharmaceuticals.
12. The method of claim 11 wherein the pharmaceuticals are selected from the group consisting of LHRH agonists, LHRH antagonists, anti-LHRH vaccines and combinations thereof.
- 25 13. The method of claim 12 wherein the LHRH agonists are selected from the group consisting of Eulexin, Goserelin, Leuprolide, Dioxalan derivatives, Triptorelin, Meterelin, Buserelin, Histrelin, Nafarelin, Lutrelin, Leuprorelin and Deslorelin.
14. The method of claim 1 resulting in a vaccine response by the patient's immune system that is comparable to the response of a pre-pubertal patient.